

THE EGG AND FIRST INSTAR LARVA OF *ITALOCHRYSA INSIGNIS* (NEUROPTERA, CHRYSOPIDAE)

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Abstract

The egg, oviraptor and first instar larva of *Italochrysa insignis* (Walker) are described and figured.

Introduction

The widely-distributed chrysopid genus *Italochrysa* Principi is represented in Australia by nine described species (New, 1980). Many of these are very limited in distribution, and only *I. insignis* (Walker) is widely distributed in southern Australia. Although it is quite common, no biological information has been published on this species. The only available data on the early stages of any member of the genus refer to the European *I. italica* (Rossi) (Principi 1943, 1946).

The following notes on the egg and first instar larva of *I. insignis* are made from the preserved offspring of a female captured in Victoria. Measurements are given in millimetres, and drawings are from slide-mounted material.

Italochrysa insignis (Walker)

(Figs 1-10)

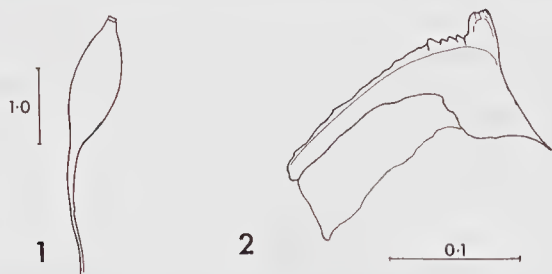
For the full synonymy of this species see New (1980: 20).

EGG (Fig. 1)

Slender, tapered, ovoid with prominent micropyle; very fine areolate sculpturing visible only at high magnification; laid on a single stalk. Very pale grey when laid, micropyle white; darkens to brownish grey towards hatching. Length ($n = 5$) 1.56 ± 0.03 , greatest breadth 0.63 ± 0.02 ; stalk length 8.3 ± 0.3 .

OVIRUPTOR (Fig. 2)

Lightly sclerotised; prominent anterior process, posterior elongate blade with incipient teeth.



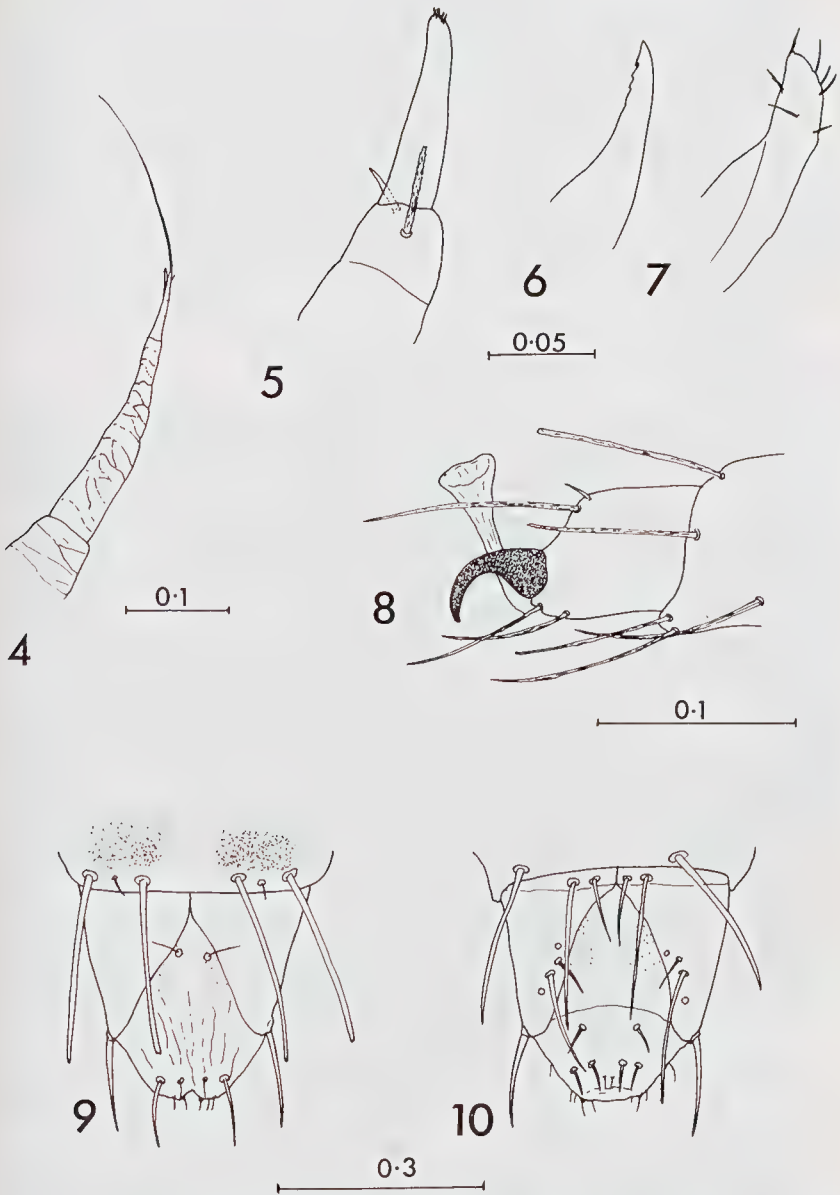
Figs 1, 2. *Italochrysa insignis* (Walker): (1) egg; (2) oviraptor, lateral aspect. (Scales in mm).



Fig. 3. *Italo-chrysa insignis* (Walker): first instar larva, dorsal aspect, with insert of single cranial seta to indicate ornamentation. (setae omitted from right side; legs and pigmentation omitted from left side, scale in mm).

FIRST INSTAR (Figs 3-10)

Body length (labral margin to end of abdomen, $n = 4$) 1.9 ± 0.1 ; greatest head width 0.45. Pale grey with dark brown markings as indicated in Fig. 3. Posture strongly 'hunched', with short head partly retracted into prothorax. Head appendages short; palpi rounded apically and with small group of apical sensilla, preapical segment with two setae (Fig. 5); palpi convergent medially; mandibles and maxillae *ca.* 1.5 times palp length, basally stout; mandible with two setae on outer edge near base, apex (Fig. 6) slightly serrate; maxilla apex (Fig. 7) bluntly rounded, with about six short setae. Antenna (Fig. 4) strongly tapered, with long apical seta and short seta near base of this; *ca.* 1.6 times mandible length; flagellum with irregular reticulate sculpturing. Dorsal labral margin of head with four long blunt ornamented setae, a minute seta between each lateral pair; a long seta on vertex behind each inner labral seta, and two smaller setae to each side of these; two small setae in front of each eye; one marginal seta behind each eye. Eyes with five stemmata in black surround.



Figs 4-10. *Italochrysa insignis* (Walker), first instar larva: (4) antenna; (5) apex of palp; (6) apex of mandible; (7) apex of maxilla; (8) tarsal region; (9) abdominal apex, dorsal aspect; (10) abdominal apex, ventral aspect. (Scales in mm).

Thoracic segments each with pronounced dorsally-reflexed lateral lobes, each lobe bearing 6-8 long setae each arising from separate basal tubercle. Abdominal segments I-VI each with small tapered lateral lobe bearing two long setae: setae on segment I shorter than on segments II-VI. Thorax and abdomen segments I-VI without other conspicuous setae but with dense dorsal coating of very fine hooked hairs (not shown in Fig. 3). Abdomen beyond segment VI narrow and with relatively short setae; apex as in Figs 9, 10. Legs with slightly ornamented tae, claw (Fig. 8) short and strongly curved; empodium long.

MATERIAL EXAMINED

Victoria, Hurstbridge, ex ♀ at light, 9.i.1982; 8 eggs laid, hatched after 8 days under uncontrolled conditions.

Comments

The larvae were provided with a range of small insects, including immature Psyllidae from *Eucalyptus* and *Acacia*, but refused all food. All died within a week. They remained motionless on the egg shells for several hours after hatching but were thereafter active, and ran when disturbed. They became covered with small particles of debris within about two days.

The egg is closely similar to that of *I. italica*, and is considerably more slender than eggs of many other Chrysopidae. The larva also strikingly resembles that of *I. italica* (third instar figured by Principi, 1946) in its hunched form, prominent thoracic lobes, dense dorsal vestiture, and form of cranial setae and appendages, and thus serves to augment knowledge of a suite of characters which may eventually be considered diagnostic for the genus. Perhaps more notably, pending information on other species of *Italo-chrysa*, it is probably that the close resemblance between larvae of the two species, together with the refusal of insect food by the present larvae, reflects a similar feeding habit. *I. italica* is unusual in the Chrysopidae, as it lives in the nests of *Crematogaster* ants. Some Australian species of *Crematogaster* nest in twigs (Brown and Taylor, 1970), but I am not aware of any records of Chrysopid larvae from ant nests in Australia. No larvae similar to those of *I. insignis* have been captured in numerous beating samples from vegetation over several years in Victoria, and further work is needed to clarify their possible association with ants.

References

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- New, T. R., 1980. A revision of the Australian Chrysopidae. *Aust. J. Zool. Suppl. Ser.* 77: 143 pp.
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